

REMARKS

In the Office Action, the Examiner rejected claims 1-7 and 9-14 under 35 U.S.C. 102(b) as being anticipated by Rueb et al., U.S. Patent No. 5,615,013. Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Rueb et al. in view of Lebeau, U.S. Patent No. 5,129,009.

Claims 11 and 12 have been amended to more particularly point out and distinctively claim the invention. It is respectfully submitted that all pending claims 1-14, particularly as amended, patentably distinguish over the teachings of Rueb et al. and Lebeau. The Examiner's rejections are thus respectfully traversed, for the reasons discussed below.

Rueb et al. does not teach or suggest a workpiece imaging method that, as recited in claims 1 through 10, involves, among other things:

illuminating a first portion of the workpiece from a first combination of illumination positions and reduced illumination positions...[and]

illuminating a second portion of the workpiece from a second [non-identified] combination of illumination positions and reduced illumination positions...

In the system of Rueb et al., there is only a single illumination source (i.e. laser 28 in Fig. 1 or laser 41 in Fig. 2) which emits a single laser beam. Although Rueb et al. does teach, in respect to Fig. 1, scanning the beam from the laser 28 to different portions or

locations on the workpiece 27 at different times, the single laser beam of Rueb et al. is not multi-positional, and does illuminate different portions of the workpiece from first and second non-identical combinations of illumination positions and reduced illumination positions.

Rueb et al. also does not teach or suggest that the illumination from the positions of a “combination of illumination positions” be at different levels so that the illumination from at least one position in a combination is “reduced” (e.g., off) relative to the illumination from another position in the combination (e.g., on). In fact, Rueb et al. does not mention or suggest having multiple combinations of illumination positions. It also does not mention or suggest selecting or changing the illumination levels of the illumination positions in a combination so as to have any effect on the distribution of energy reflected from different portions of the workpiece.

Rueb et al. also does not teach or suggest a workpiece imaging method that, as recited in amended claims 11 through 14, involves, among other things:

illuminating the workpiece with energy from a plurality of illumination positions...

attenuating, at a first location between an illumination position and an image location corresponding to a first portion of the workpiece, at least a portion of the energy from the illumination position so as to limit the distribution of energy reflected from the image location corresponding to the first workpiece portion...[and]

attenuating, at a second location between an illumination position and an image location corresponding to a second portion of the workpiece, at least a por-

tion of the energy from the illumination position so as to limit the distribution of energy reflected from the image location corresponding to the second workpiece portion...

Here again, Rueb et al. uses only a single illumination source and produces only a single beam emanating from a single illumination position at any given time. Rueb et al. does not teach or suggest selectively attenuating the energy from selected illumination positions so as to limit the distribution of energy reflected from first and second workpiece positions.

Lebeau does not remedy the deficiencies in the teachings of Rueb et al. in regard to the inventive workpiece imaging method claimed herein. The Examiner correctly notes that Lebeau teaches imaging of semiconductor wafers, such as those recited in claim 8 herein. Additionally, the system of Fig. 7 of Lebeau shows a wafer 11 being illuminated by “a variety of light sources 34D,” as well as a camera 38 which detects the image of the wafer 11 and feeds the image information to a computer 35. However, there is no teaching or suggestion in Lebeau of providing first and second non-identical combinations of illumination positions and reduced illumination positions so as to limit the distribution of the energy reflected from different portions of the workpiece, as recited in claims 1 through 10. Lebeau also does not teach or suggest selectively and variably attenuating the energy from the multiple light sources or multiple illumination positions to achieve the same result, as recited in claims 11 through 14. While Lebeau does talk about changing “lighting angles and lighting colors” to provide additional feature vectors

(see col. 6, ll. 27-32 of Lebeau), there is nothing in Lebeau to indicate that there is any benefit to be gained from doing that selectively and differently for different illumination sources or positions in a combination of such sources or positions so as to limit the energy reflected from different workpiece portions as recited in the claims.

Accordingly, it is believed that claims 1 through 14 are patentable over the cited art. Reconsideration of the rejections and allowance of the application are respectfully requested.

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Respectfully submitted,

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